

CLAIM AMENDMENTS

1-68 (Previously Cancelled)

69. (Previously Amended) The waveguide system of Claim 79 wherein said first polarization is substantially identical to said second polarization.

70. (Previously Amended) The waveguide system of Claim 79 wherein said first polarization is substantially orthogonal to said second polarization.

71. (Previously Amended) The waveguide system of Claim 79 wherein the amount of rotational offset of the slot in the polarization plate from the orientation of the first passage is substantially 45°.

72. (Previously Amended) The waveguide system of Claim 79 wherein the rotational offset between said first path and said slot is the same as the rotational offset between said slot and said second path.

73. (Previously Amended) The waveguide system of Claim 79 wherein said signal is a radio frequency signal in the range of 2 to 110 GHz.

74. (Previously Amended) The waveguide system of Claim 79 wherein said signal is a radio frequency signal is in the microwave frequency range.

75. (Previously Amended) The waveguide system of Claim 79 wherein said first path is associated with a radio communication apparatus and said second path is associated with an antenna.

76. (Previously Added) The waveguide system of Claim 75 wherein said antenna is a polarized antenna and the polarization of said polarized antenna is the same as the polarization of said second path.

77. (Previously Amended) The waveguide system of Claim 79 wherein said first path is associated with an antenna and said second path is associated with a radio communication apparatus.

78. (Previously Added) The waveguide system of Claim 77 wherein said antenna is a polarized antenna and the polarization of said polarized antenna matches the polarization of the first path.

79. (Previously Amended) A waveguide system for propagating a signal wherein said signal enters said waveguide system oriented with a first polarization and exits said waveguide system oriented with a second polarization, said waveguide system comprising:

a first waveguide adapted to be operatively connected to a polarization plate, said first waveguide comprising a first passage for propagating said signal through the first waveguide wherein said first passage is oriented substantially similar to the orientation of the signal when the signal is oriented with said first polarization;

a second waveguide adapted to be operatively connected to the polarization plate, said second waveguide comprising a second passage for propagating said signal through the second waveguide wherein said second passage is oriented substantially similar to the orientation of the signal when the signal is oriented with said second polarization; and

a polarization plate adapted to be operatively connected to said first and second waveguides so as to allow for the propagation of the signal from the first waveguide where the signal is oriented with the first polarization, through said polarization plate, to

the second waveguide where the signal is oriented with the second polarization, said polarization plate comprising:

a slot for propagating said signal wherein said slot is substantially similar in shape to said first passage and said second passage and wherein said slot is oriented so as to be rotationally offset, about an axis running longitudinally through the first and second passages and through said slot, from the orientation of the first passage and the orientation of the second passage, so that said signal enters the waveguide system oriented with said first polarization and exits said waveguide system with said second polarization; wherein said polarization plate includes a first tapered portion to thereby create a first transition region between said first passage and said slot.

80. (Previously Added) The waveguide system of Claim 79 wherein said polarization plate further includes a second tapered portion to thereby create a second transition region between said slot and said second passage.

81. (Previously Amended) The waveguide system of Claim 79 wherein the length of said slot along said longitudinal axis is selected so as to provide in a predetermined manner a desired signal path attribute.

82. (Previously Added) The waveguide system of Claim 81 wherein said signal path attribute includes a desired impedance.

83-90 (Previously Cancelled)

91. (New) The waveguide system of Claim 79, wherein said slot is symmetric about a plane perpendicular to the axis.

92. (New) The waveguide system of Claim 79, wherein the slot intersecting a front face of the polarization plate is oriented so as to be rotationally offset, about the axis from the orientation of the first passage and the orientation of the second passage and the slot intersecting a rear face of the polarization plate is oriented so as to be rotationally offset, about the axis from the orientation of the first passage and the orientation of the second passage.

93. (New) The waveguide system of Claim 79, wherein said slot is symmetric about a plane which includes the axis.